

ANNOUNCING THE RELEASE OF

SILVER SANDS GERMLASM SANDBAR WILLOW

TESTED CLASS OF NATURAL GERMLASM

by the
UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

and the
MINNESOTA
AGRICULTURAL EXPERIMENT STATION

and the
NORTH DAKOTA
AGRICULTURAL EXPERIMENT STATION

and the
SOUTH DAKOTA
AGRICULTURAL EXPERIMENT STATION

The United States Department of Agriculture, Natural Resources Conservation Service; the Minnesota Agricultural Experiment Station; the North Dakota Agricultural Experiment Station; and the South Dakota Agricultural Experiment Station announce the naming and release of a tested class of sandbar willow (*Salix interior* Rowlee).

As a tested class release this plant will be referred to as **Silver Sands Germplasm sandbar willow**. There has been no genetic manipulation and it is considered to be a “natural” track release. It has been assigned the NRCS Accession Number 9035212 and P.I. Number 596532. This alternative release procedure is justified because there are no improved releases commercially available and adapted to this region.

Silver Sands Germplasm sandbar willow is released for use as a native species in riparian area plantings for purposes such as streambank erosion control, lakeshore stabilization, and wildlife habitat. This selection should also be given high consideration in windbreak plantings on less droughty sites. The name Silver Sands was first used by Bill Smith at Smith Nursery in Charles City, Iowa, who collected the original material near the nursery. It was called Silver Sands because of the silvery-blue leaves.

Collection Site Information: Vegetative material of accession 9035212 was received in 1983 from Dr. Dale Herman at North Dakota State University. Dr. Herman received the accession as a local source collection from Smith Nursery at Charles City, Iowa (USDA Plant Hardiness Zone 4b).

Description: Sandbar willow is a native, strongly spreading shrub species with a preference for wet sites in riparian zones such as alluvial bottoms and streambanks. It forms thickets that can become quite dense. Height varies from 3 to 15 feet depending on site conditions. The 2-to-5 inch long narrow leaves are serrated and vary in color from silver gray to light blue. Usually they are more

silver colored in the spring and early summer (Stephens 1973). There is variation in the species and numerous varieties have been classified. Catkins appear after the leaves in the spring. The species is dioecious, so male and female flowers are produced by separate plants. This willow is susceptible to twig cankers, tar spot, aphids, willow galls, and scale insects (USDA, NRCS 2002). It is resilient to flood waters, sediment deposition, and pruning from wildlife. Plantings have been known to survive two months of continuous inundation. Fall color is often an attractive yellow gold. All material tested appeared to be male clones and no seed was observed. The Silver Sands Germplasm does not differ from the general description for the species.

Evaluation and Plant Performance: The original vegetative material was planted in off-center evaluations beginning in 1983 (Table 1). The Silver Sands Germplasm established poorly at Bottineau because of the extremely dry conditions. Seedlings planted at Becker were continuously clipped at ground level by rabbits and did not establish well. Superior initial plant performance was noted in the remaining off-center evaluations and the accession was moved into advanced testing. Plants were propagated by rooting fresh hardwood cuttings in a mist bed in early spring. Advanced evaluation included 25 field planting trials in Minnesota, North Dakota, and South Dakota from 1992 through 1998 (Table 2). Survival averaged 69%. This is considered good, as most of the plantings were non-traditional type evaluations such as streambank stabilization or critical area plantings with a high occurrence of washed out areas and heavy weed competition. The average annual growth rate was 1.4 feet per year, and the average annual crown spread was 0.7 feet per year. Partial winter die-back, typical of the species, occurred at several sites. New plants did regenerate from adjacent root suckers. It was noted that this species did not compete very well with perennial weeds and growth rates were greatly reduced, especially in sod conditions. The Silver Sands Germplasm has a strong suckering habit that provided excellent soil stabilization and wildlife habitat, especially on wetter sites. This release also performed well in windbreak plantings with good weed control. However, in dry years, there was branch die-back on the sandbar willow. Attractive spring and fall colors were rated high in aesthetic appeal.

Ecological Considerations: Silver Sands Germplasm is a tested genotype of naturally occurring sandbar willow and has had no intentional genetic manipulation. It does not differ significantly in rate of spread from naturally occurring sandbar willow. Seed production has not been observed. Rhizome spread can be significant, especially with tillage or clean weed control (lack of competition). Spreading off-site has not been observed on any of the test plantings. Silver Sands Germplasm was documented as "OK to Release" when rated through the worksheet for "Environmental Evaluation of Plant Material Releases".

Anticipated Conservation Use: The primary conservation use of Silver Sands Germplasm sandbar willow is in combination with other native riparian species for streambank erosion control, lake shore stabilization, and wildlife habitat. It also performs well in windbreaks on better moisture sites with good weed control.

Potential Area of Adaptation: This selection has performed well in extensive test plantings on a variety of sites in North Dakota, South Dakota, and Minnesota. It is anticipated to be broadly adapted on soils/sites recommended for the species (Field Office Technical Guide) across the regions of the Upper Midwest and Northern Great Plains.

Availability of Plant Materials: Rooted cuttings of the original material (G1) will be made available from the Bismarck Plant Materials Center to establish propagation beds of the Silver Sands Germplasm. Various conservation nurseries in the region will sell rooted cuttings.

References:

Stephens, H. A. 1973. Woody Plants of the North Central Plains. The University Press of Kansas, Lawrence, Kansas. 530 p.

USDA, NRCS 2002. Plant Fact Sheet, Sandbar Willow. USDA NRCS Northeast Plant Materials Program. 2 p.

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Approvals for the release of Silver Sands Germplasm sandbar willow (*Salix interior* Rowlee).

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Silver Sands Germplasm Sandbar Willow Off-Center Evaluations (Table 1)

	<i>Survival %</i>	<i>Vigor 1 = best 9 = poorest</i>	<i>Height (ft) (years)</i>	<i>Canopy (ft) (years)</i>
McKenzie, ND 1987 - 1996	89	1.8	9.5 (15)	13.0 (15)
Bottineau, ND 1987 - 2001	37	3.8	8.2 (10)	10.8 (10)
Highmore, SD 1987 - 2001	100	1.7	13.6 (10)	26.7 (10)
Morris, MN 1987 - 1996	98	1.6	16.1 (10)	30.5 (10)
Crookston, MN 1987 - 1996	87	2.0	12.5 (10)	16.4 (10)
Grand Rapids, MN 1996 - 2000	98	1.5	8.8 (5)	11.8 (5)
Becker, MN 1996 - 2000	53	4.3	5.2 (5)	8.4 (5)

Silver Sands Germplasm Sandbar Willow Field Planting Data Summary 1992-1996 (Table 2)					
<i>Purpose</i>		<i>Weed Competitio n 1 = lowest 9 = highest</i>	<i>Survival %</i>	<i>Height ft/yr</i>	<i>Crown ft/yr</i>
North Dakota					
Park River	Streambank erosion control	3	73	1.4	0.2
Park River	Streambank erosion control	3	85	0.8	0.4
Rugby	Wildlife	5	100	3.5	3.0
Rugby	Wildlife	3	92	2.1	2.4
Turtle Lake	Wildlife	7	85	3.5	1.3
Turtle Lake	Wildlife	5	72	1.1	0.5
Turtle Lake	Streambank erosion control	5	51	1.0	0.5
Hettinger	Streambank erosion control	5	63	0.7	0.0
Stanley	Wildlife	5	53	1.0	0.3
South Dakota					
Aberdeen	Critical area	6	93	1.5	1.0
Brookings	Streambank erosion control	2	80	0.8	0.5
Salem	Streambank erosion control	3	70	2.0	0.1
Salem	Critical area	3	60	2.0	0.7
Salem	Streambank erosion control	7	30	0.8	0.7
Salem	Streambank erosion control	6	30	1.5	1.0
Huron	Critical area	4	42	1.0	0.5
Miller	Streambank erosion control	5	77	1.5	0.5
Miller	Critical area	5	75	2.0	0.3
Faulton	Farm windbreak	9	75	1.5	0.5
Murdo	Streambank erosion control	6	88	0.9	0.4
Mudro	Streambank erosion control	9	76	1.0	0.3
Belle Fourche	Wildlife	3	70	2.0	1.0
Minnesota					
Breckenridge	Streambank erosion control	3	37	1.3	0.5
Windom	Wildlife	4	90	0.3	0.3
Worthington	Streambank erosion control	5	70	0.2	1.5
AVERAGE		5	69	1.4	0.7